AMENDMENTS TO THE CLAIMS

1. (Previously Presented) An optical reader having an image sensor, and an illumination system, said reader comprising:

generating circuit for generating an array of multibit pixel values;

establishing circuit for establishing max and min peak tracking lines for said array of pixel values;

subjecting circuit for subjecting said array of multibit pixel values to a peak characterizing data development routine, wherein said subjecting circuit includes a circuit for sensing peaks of said array of pixel values using iteratively aggressive peak sensing thresholds;

developing circuit responsive to said subjecting circuit for developing peak characterizing data characterizing peaks of said array of multibit pixel values;

determining circuit for determining a plurality of digitization parameters based on said developed peak characterizing data, wherein said plurality of digitization parameters include a peak sensing threshold parameter, and grey band position parameters; and

finding circuit for finding edge positions represented by said array of pixel values utilizing said plurality of digitization parameters.

2. (Original) The reader of claim 1, wherein said generating circuit generates an array of pixel values corresponding to a row of pixels of a 1D image sensor.

3. (Original) The reader of claim 1, wherein said generating circuit generates an array of pixels corresponding to a line of pixels of a 2D image sensor.

4. (Original) The reader of claim 1, wherein said establishing circuit comprises circuitry for establishing a forward tracking line, a backward direction trackline line, and circuit for compositing said forward and backward tracking lines.

5. (Original) The reader of claim 1, wherein said subjecting circuit includes circuitry for subjecting said array of pixel values to peak sensing thresholds that depend on a difference between said max and min peak tracking lines.

6. (Original) The reader of claim 1, wherein said subjecting circuit includes circuitry for subjecting said array of pixel values to a first peak sensing threshold, a second peak sensing threshold, and a third peak sensing threshold.

7. (Previously Presented) The reader of claim 1, wherein said determining circuit determines said digitizing peak sensing threshold to be a previous data development peak sensing threshold if a present data development peak sensing threshold senses no new peaks.

8. (Original) The reader of claim 1, further comprising a calculating circuit for calculating an average max peak value and an average min peak value.

9. (Original) The reader of claim 1, further comprising a calculating circuit for calculating an average max peak value and an average min peak value, wherein said finding circuit is responsive to said calculating circuit.

10. (Original) The reader of claim 1, further comprising a calculating circuit for calculating an average max peak value and an average min peak value, wherein said finding circuit is responsive to said calculating circuit.

11. (Currently Amended) An optical reader for reading a bar code symbol having a series of bars and spaces, said optical reader comprising:

an image sensor and a control circuit, said control circuit being configured to:

(a) generate an array of multi-bit pixel values, wherein intensities of said pixel values define a generally sinusoid pattern, wherein a first set of max-min peaks of said array are attributable to bar-space transitions of said bar code symbol, and wherein a second set of max-min peaks superimposed on a major peak of said array are attributable to noise, wherein amplitudes of said first set of max-min peaks and said second set of max-min peaks have approximately the same value[[,]] [[;]]

(b) process said array of multi-bit pixel values to discriminate between said first set and said second set of max-min peaks; and

(c) digitize said first set of max-min peaks without digitizing said second set of max-min peaks.

12. (Previously Presented) The optical reader of claim 11, wherein amplitudes of said first set of max-min peaks and said second set of max-min peaks are of a common order of magnitude.

14. (Previously Presented) The method of claim 11, wherein said processing step (b) includes the steps of (i) determining peak tracking lines; (ii) establishing a grey band as a percentage of the peak tracking lines, and (iii) determining whether the set of max-min peaks are within said grey band.

15. (Previously Presented) An optical reader having an image sensor, and an illumination system, said reader comprising:

generating circuit for generating an array of multibit pixel values;

establishing circuit for establishing max and min peak tracking lines for said array of pixel values;

developing circuit for developing peak characterizing data characterizing peaks of said array of multibit pixel values, the developing circuit being responsive to a circuit that subjects said array to iteratively aggressive peak sensing thresholds;

determining circuit for determining at least one digitization parameter based on said developed peak characterizing data, wherein said at least one digitization parameter includes at least one of a peak sensing threshold parameter, and a grey band position parameter; and

finding circuit for finding edge positions represented by said array of pixel values utilizing said at least one digitization parameter.

16. (Previously Presented) The reader of claim 15, wherein said generating circuit generates an array of pixel values corresponding to a row of pixels of a 1D image sensor.

17. (Previously Presented) The reader of claim 15, wherein said generating circuit

generates an array of pixels corresponding to a line of pixels of a 2D image sensor.

18. (Previously Presented) The reader of claim 15, wherein said establishing circuit comprises circuitry for establishing a forward tracking line, a backward direction trackline line, and a circuit for compositing said forward and backward tracking lines.

19. (Previously Presented) A method for decoding a bar code symbol having a series of bars and spaces, said method comprising the steps of:

(a) generating an array of multi-bit pixel values, the intensities of the pixel values defining a generally sinusoidal pattern and having a first set of max-min peaks that are attributable to bar space transitions of said array and a second set of max-min peaks superimposed on a major peak of said array that are attributable to noise, wherein the amplitudes of the first set of max-min peaks and the second set of max-min peaks have approximately the same value,

(b) processing said array of multi-bit pixel values to discriminate whether a certain set of max-min peaks therein are of said first set or said second set; and

(c) digitizing said certain set of max-min peaks conditionally on the condition that in said processing step (b) it is determined that said certain set of max-min peaks is of said first set.

21. (Currently Amended) The method of claim 19, wherein said processing step (b) includes the steps of (i) determining peak tracking lines; (ii) establishing a grey band as a percentage of the peak[[,]] tracking lines[[,]] [[,]] and (iii) determining whether the set of max-min peaks are within said grey band.

22. (Previously Presented) An optical reader having an image sensor, and an illumination system, said reader comprising:

generating means for generating an array of multibit pixel values;

establishing means for establishing max and min peak tracking lines for said array of pixel values;

subjecting means for subjecting said array of multibit pixel to a peak characterizing data development routine, wherein said subjecting circuit includes circuit

for sensing peaks of said array of pixel values using iteratively aggressive peak sensing thresholds;

developing means responsive to said subjecting circuit for developing peak characterizing data characterizing peaks of said array of multibit pixel values;

determining means for determining a plurality of digitization parameters based on said developed peak characterizing data, wherein said plurality of digitization parameters include a peak sensing threshold parameter, and grey band position parameters; and

finding means for finding edge positions represented by said array of pixel values utilizing said plurality of digitization parameters.

23. (Previously Presented) The reader of claim 22, wherein said generating means generates an array of pixel values corresponding to a row of pixels of a 1D image sensor.

24. (Previously Presented) The reader of claim 22, wherein said generating means generates an array of pixels corresponding to a line of pixels of a 2D image sensor.

25. (Previously Presented) The reader of claim 22, wherein said establishing means comprises circuitry for establishing a forward tracking line, a backward direction tracking line, and circuit for compositing said forward and backward tracking lines.

26. (Previously Presented) The reader of claim 11, wherein said reader is hand held.

27. (Previously Presented) The reader of claim 11, wherein said first set of max-min peaks is proximate a transition region of said array of multi-bit pixel values.

28. (Previously Presented) The method of claim 19, wherein said first set of max-min peaks is proximate a transition region of said array of multi-bit pixel values.

29. (Currently Amended) An optical reader for reading a bar code symbol having a series of bars and spaces, said optical reader comprising:

an image sensor and a control circuit, said control circuit being configured to:

(a) generate an array of multi-bit pixel values, wherein intensities of said pixel values define a generally sinusoid pattern, wherein a first set of max-min peaks proximate are attributable to bar-space transitions of said bar code symbol, and wherein a second set of max-min peaks are attributable to noise;

(b) process said array of multi-bit pixel values to discriminate between said first set and said second set of max-min peaks, wherein said processing step (b) includes the steps of (i) determining peak tracking lines; (ii) establishing a grey band as a percentage of the peak tracking lines[[,]] [[.]] and (iii) determining whether the set of max-min peaks are within said grey band; and

(c) digitize said first set of max-min peaks without digitizing said second set of max-min peaks.

30. (Currently Amended) A method for decoding a bar code symbol having a series of bars and spaces, said method comprising the steps of:

(a) generating an array of multi-bit pixel values, the intensities of the pixel values defining a generally sinusoidal pattern and having a first set of max-min peaks that are attributable to bar space transitions of said array and a second set of max-min peaks that are attributable to noise,

(b) processing said array of multi-bit pixel values to discriminate whether a certain set of max-min peaks therein are of said first set or said second set, wherein said processing step (b) includes the steps of (i) determining peak tracking lines; (ii) establishing a grey band as a percentage of the peak[[,]] tracking lines[[,]] [[.]] and (iii) determining whether the set of max-min peaks are within said grey band; and

(c) digitizing said certain set of max-min peaks conditionally on the condition that in said processing step (b) it is determined that said certain set of max-min peaks is of said first set.